

WE CLAIM AS OUR INVENTION:

1. A method for correcting a field strength of radio-frequency pulses emitted by an antenna in a magnetic resonance examination conducted in a magnetic resonance examination apparatus, comprising the steps of:

in a magnetic resonance examination, supplying power into an antenna to cause current to flow in the antenna to emit a radio-frequency pulse having a field strength; and

regulating said current in said antenna, and thereby regulating the field strength of the radio-frequency pulse, by changing said power by a predetermined nominal value.

2. A method as claimed in claim 1 comprising maintaining said current constant during said magnetic resonance examination.

3. A method as claimed in claim 1 wherein said magnetic resonance examination is conducted on a subject having an influence on said field strength of said radio-frequency pulse, and comprising, during said magnetic resonance examination, regulating said current in said antenna, by changing said power, to compensate for said influence of the subject on the field strength of the radio-frequency pulse.

4. A method as claimed in claim 1 comprising making a basic adjustment of said power before beginning said magnetic resonance examination.

5. A method as claimed in claim 1 comprising regulating said current in said antenna phase-sensitively.

6. A method as claimed in claim 1 comprising the steps of:
arranging a field probe within said field of said antenna;
using said field probe, obtaining a restorative signal; and

employing said restorative signal to change said power to regulate said current.

7. A method as claimed in claim 6 comprising employing two field probes disposed at an angle relative to each other in said field of said antenna;
obtaining respective output signals from said two field probes; and
forming said restorative signal by a phase-shifted superimposition of the respective output signals of said two field probes.

8. A method as claimed in claim 7 comprising conducting said magnetic resonance examination on a subject, and selecting said angle from the group of angles, relative to a horizontal slice plane through said subject, consisting of 0°, 90°, 180° and 270°.

9. A method as claimed in claim 1 wherein said antenna has two supply lines for supplying said power to said antenna, and comprising the steps of:
connecting respective directional couplers in said two supply lines;
using said directional couplers, determining a restorative signal for regulating said current in said antenna; and
using said restorative signal to regulate said current in said antenna by changing said power.

10. In a magnetic resonance examination apparatus for conducting a magnetic resonance examination of a subject, the improvement comprising:
a power supply arrangement;
a radio-frequency antenna supplied with power by said power supply arrangement to cause current to flow in said antenna to cause a radio-frequency pulse, having a field strength associated therewith, to be emitted from said antenna; and

a regulation device connected to said power supply for regulating said current, and thereby regulating said field strength by changing said power by a predetermined nominal value.

11. A magnetic resonance examination apparatus as claimed in claim 10 comprising a field probe disposed in said field, said field probe emitting an output signal, said field probe being connected to said regulation device and said regulation device regulating said current dependent on said output signal from said field probe.

12. A magnetic resonance examination apparatus as claimed in claim 11 wherein said field probe comprises two field probe elements that respectively emit linearly polarized components, and wherein said regulation device determines a circularly polarized field emitted by said antenna from said linearly polarized components.

13. A magnetic resonance examination apparatus as claimed in claim 12 further comprising a phase shifter connected between said two field probe elements and said regulation device, said phase shifter superimposing respective output signals from said two field probe elements to form a common restorative signal.

14. A magnetic resonance examination apparatus as claimed in claim 12 wherein said two field probe elements are disposed at an angle, relative to a horizontal slice plane through the subject, selected from the group of angles consisting of 0°, 90°, 180° and 270°.

15. A magnetic resonance examination apparatus as claimed in claim 11 wherein said antenna encompasses a volume, and wherein said field probe is disposed outside of said volume.

16. A magnetic resonance examination apparatus as claimed in claim 10 wherein said power supply arrangement comprises supply lines connected to said antenna, and further comprising respective directional couplers connected in said supply lines, and connected to said regulation device for use by said regulation device in regulating said current.